



Sediment source identification fieldwork in progress on Carneros Creek.

Award Amount
\$318,300

Watershed
Napa River Watershed

County
Napa County

CALFED Region
Bay Region

Legislative Districts
US Congress: 1
State Assembly: 7
State Senate: 2

Purpose

Create a “desktop watershed model” to help guide management decision-making in the Napa Basin.

Project Goals

- Provide tools to help resolve potential pollutant problems.
- Identify and prioritize stream/riparian habitat restoration programs.
- Collect high-resolution digital topographic data to develop a digital terrain model covering the entire watershed.

Benefits to the CALFED Program

This project addresses all of the primary CALFED Program objectives by demonstrating a powerful and cost-effective tool for analyzing physical and biological functions of watersheds. It allows prediction of likely responses to a variety of potential land and water management strategies. It also fills a need for a new approach to ecosystem quality assessment in a system such as the Napa River, which the Ecosystem Restoration Program has identified as a target watershed for restoration activities, yet where the cost of assessment is prohibitive and access to sampling sites is difficult. The modeling approach used in this project will lead to a better understanding of aquatic habitat characteristics and help determine how the system can best be restored to improve water quality, water supply, and ecosystem values.

Project Overview

This project advances ongoing watershed management and restoration efforts in the Napa River basin by using airborne laser altimetry to generate topographic maps and watershed data of much higher resolution than currently exists. It also demonstrates the application of desktop watershed models that take advantage of these higher resolution data to improve understanding of watershed processes, conditions, restoration opportunities, and constraints.

The desktop watershed model created by this project will provide a far more accurate and complete representation of watershed topography than is currently available. The added accuracy will allow the entire stream channel network and important hillslope features of the region to be accurately located and mapped. The data will become part of a spatial geographic information system (GIS), permitting combination with other GIS information. It will enable more robust physical and ecological analyses of the watershed.

This approach facilitates the development of hypotheses about expected resource conditions, the extrapolation of site-specific information to entire watersheds, and the modeling of causal linkages between land use impacts and resource conditions. This project creates a spatially explicit information database of sufficient resolution to allow rapid yet comprehensive watershed analysis and restoration planning.



The technical science team meets in Napa to discuss the project.

Contact Information

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